Wireless Network Adapter 54Mb USB Pen

User's Manual

Cod. KR.XC

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Package contents

The following contents should be found in your box:

- One Kraun KR.XC
- One USB extension cable
- Quick Installation Guide
- One Kraun KR.XC Resource CD, including:
  - Utility and Drivers
  - User Guide
  - Other Helpful Information

Note: If any of the listed contents is damaged or missing, please contact the retailer from whom you purchased the Kraun KR.XC Wireless Adapter for assistance.

1. Introduction

1.1 Overview of the product

The Kraun KR.XC gives you the flexibility to install your PC or notebook PC in the most convenient location available, without the cost of running the network cables.
Its auto-sensing capability allows high packet transfer up to 54Mbps for maximum throughput, or dynamic range shifting to lower speeds due to distance or operating limitations in an environment with a lot of electromagnetic interference. It can also interoperate with all 11Mbps wireless (802.11b) products. Your wireless communications are protected by up to 128-bit WEP and WPA encryption, so your data stays secure.

1.2 Features

- Complies with IEEE802.11g, IEEE802.11b standards
- Supports WPA data security, IEEE802.1x authentication, TKIP/AES encryption, 64/128-bit WEP encryption
- Supports 54/48/36/24/18/12/9/6Mbps or 11/5.5/3/2/1Mbps wireless LAN data transfer rates
- Provides USB interface
- Supports Ad-Hoc and Infrastructure modes
- Supports roaming between access points when configured in Infrastructure mode
- Eases configuration and provides monitoring information
- Supports Windows 98SE, Me, 2000, XP, Vista
- Internal Antenna

1.3 LED Status

The LED on the top of this card indicates Link/Act status. It blinks at green light when sending and receiving data.

2. Installation Guide

2.1 System Requirements

2.1.1 Overview

The Adapter's Setup Wizard will guide you through the installation procedure for Windows 98SE, Me, 2000, XP and Vista. The Setup Wizard will guide you install the Utility and drivers.
If you install the hardware before the software, you will be prompted "Found New Hardware Wizard", click the Cancel button, and run the Setup Wizard program on the CD-ROM.
The Setup steps for Windows 98SE, Me, 2000 and XP are very similar. The following setup steps are for Windows 2000 and Vista.

2.1.2 Software Installation for Windows 2000

1. Insert the Resource CD into your CD-ROM drive, click the Start button and choose Run. In the field that appears, enter F:\KR.XC\Win9x_2k_XP_X64\Setup.exe (if "F" is the letter of your CD-ROM drive). Figure 2.1 should then appear.
2. You can click the Cancel button to end the installation on the Preparing Setup screen, figure 2.1. Otherwise, the Setup Wizard will display a screen similar to that shown in figure 2.2 after a moment.

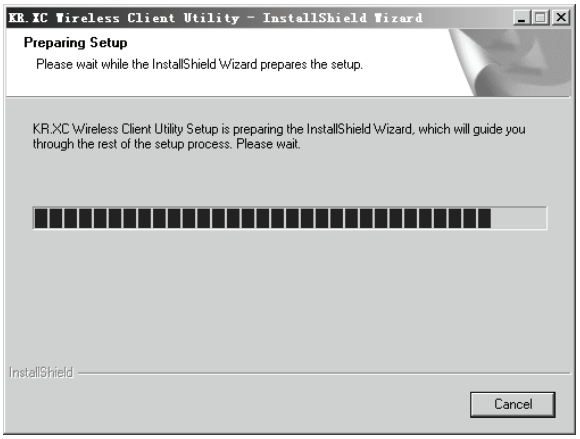
KR.XC Wireless Client Utility - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
KR.XC Wireless Client Utility Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
InstallShield
Cancel

Figure 2.1 Preparing Setup

3. To continue, click the Next button on the screen, figure 2.2. Click the Cancel button to end the Installation.

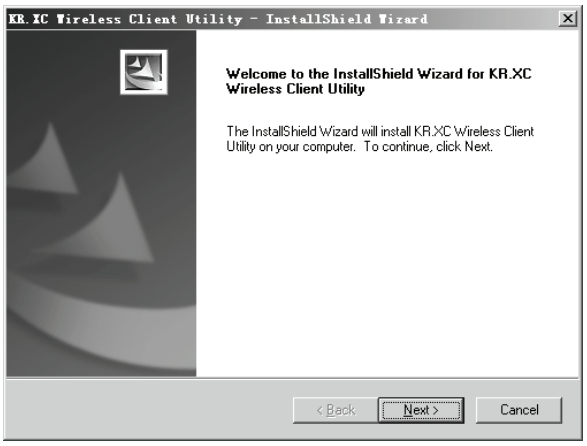
KR.XC Wireless Client Utility - InstallShield Wizard
Welcome to the InstallShield Wizard for KR.XC Wireless Client Utility
The InstallShield Wizard will install KR.XC Wireless Client Utility on your computer. To continue, click Next.
< Back
Next >
Cancel

Figure 2.2 Start Setup

4. Click Browse to change the destination location for the software in figure 2.3. Click Next to continue the Installation. Click Back to return to the previous page, or click Cancel to end the Installation.

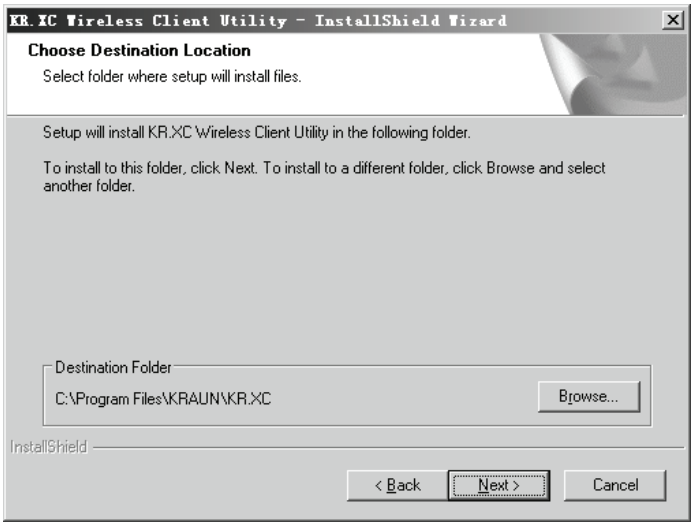
KR.XC Wireless Client Utility - InstallShield Wizard
Choose Destination Location
Select folder where setup will install files.
Setup will install KR.XC Wireless Client Utility in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\KRAUN\KR.XC
Browse...
InstallShield
< Back
Next >
Cancel

Figure 2.3 Choose Destination Location

5. While files are copying, you will see a warning box shown in figure 2.4. Please select YES to continue installation. Our drivers have been tested thoroughly, and are able to work with the operating system.

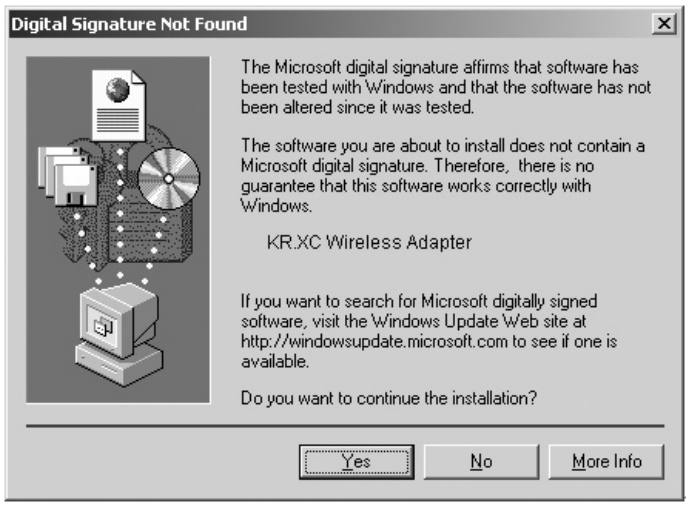
Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
KR.XC Wireless Adapter
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

Figure 2.4 Windows 2000 Warning Box

6. After the files have been successfully copied, the screen in figure 2.5 will appear. Click the Finish button to finish the wizard.

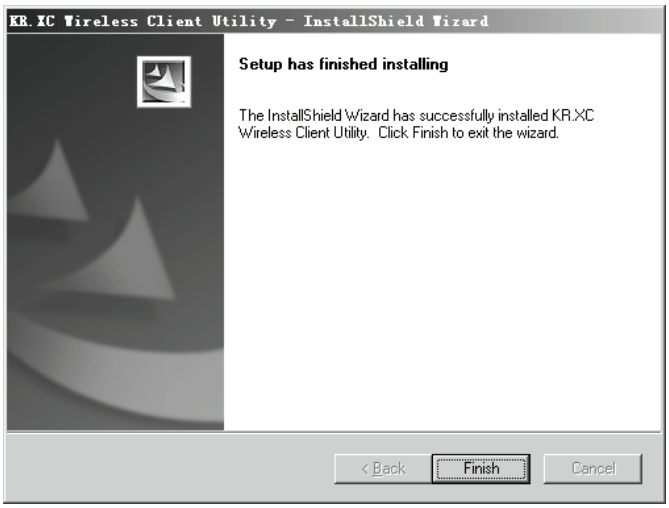
KR.XC Wireless Client Utility - InstallShield Wizard
Setup has finished installing
The InstallShield Wizard has successfully installed KR.XC Wireless Client Utility. Click Finish to exit the wizard.
< Back
Finish
Cancel

Figure 2.5 Finish

7. After installing the software, Please plug the adapter into your PC. If you need instructions as to how to do this, please refer to section 2.2 Hardware Installation. If you have plugged it into you PC already, please un-plug it and plug it back in. The OS will automatically detect the adapter and automatically setup the driver for the adapter. If it does not, please follow the setup steps to finish the driver installation.

After installing the driver successfully, you should see an icon, or , appear in your system tray.

2.1.3 Software Installation for Windows Vista

After you complete the hardware installation, follow the steps below in order to install the KR.XC Wireless USB Adapter drivers for Windows Vista:

1. Insert the Resource CD into your CD-ROM drive, right-click the Computer icon as shown in the Figure 2.6, select the Properties.

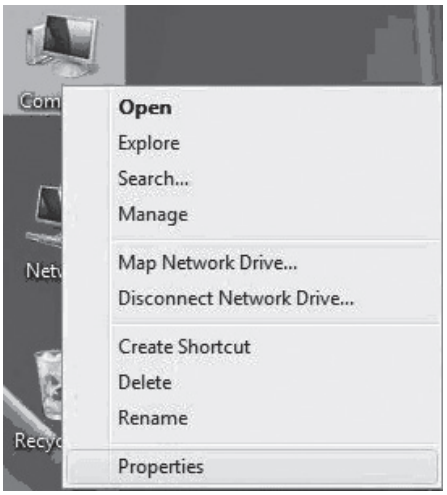

Figure 2.6 Begin installation for Windows Vista

2. Select Device Manager as shown in Figure 2.7, then select Continue in the next screen.

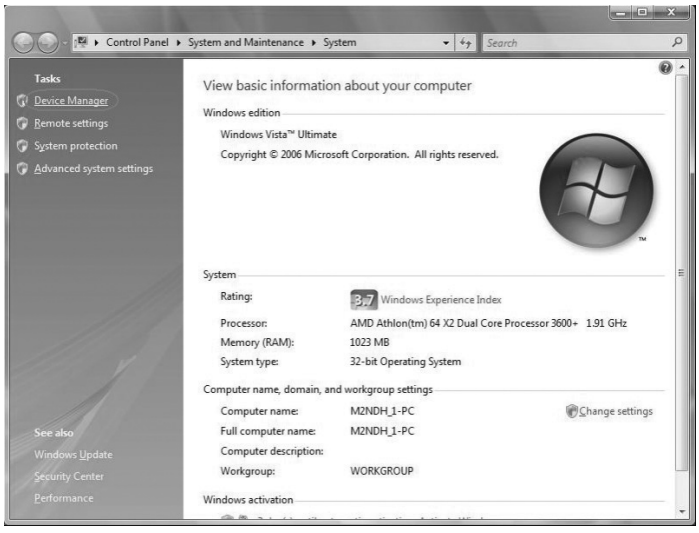

Figure 2.7 Select Device management

3. Right-click the adapter icon "54M.USB ...", and select "Update Driver Software" to proceed.

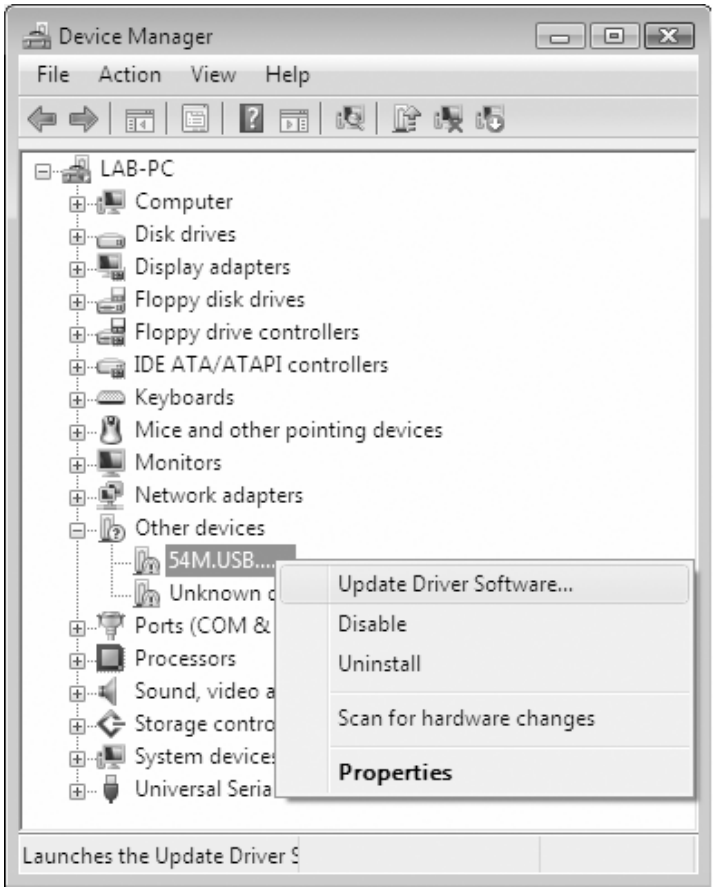

Figure 2.8 Driver management

4. Select the method to update the driver software (see Figure 2.9). If you want the system to search the software automatically, select the first type. Otherwise select "Browse my computer for driver software" to install the software (best way).

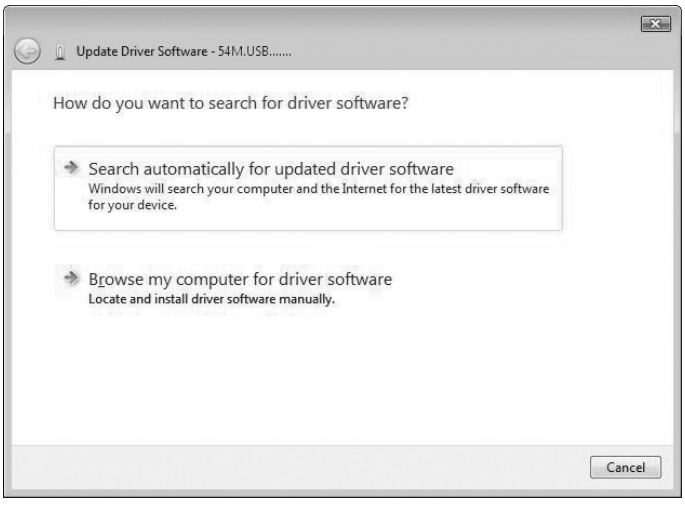
Update Driver Software - 54M.USB.....
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

Figure 2.9 Select the method to install

5. Click the Browse button in the next screen to select the file which contains the driver software for the adapter. After that, click Next to proceed.

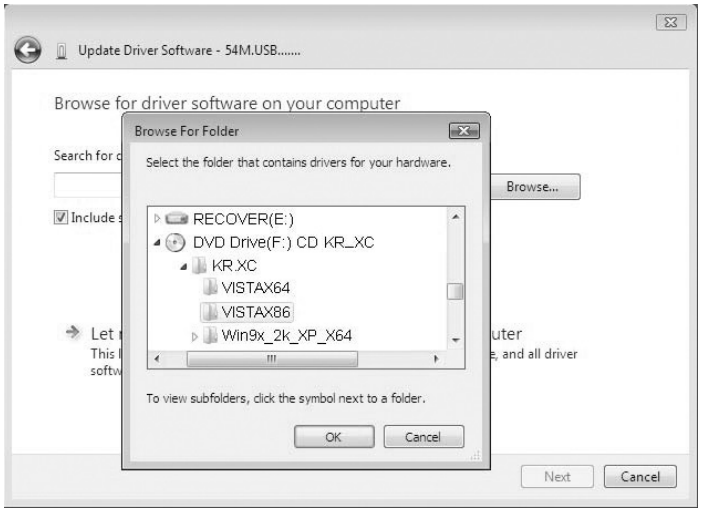

Figure 2.10 Select the driver software

☞ Note:

Vista X86 is designed for the Vista of 32bit, Vista X64 is designed for the Vista of 64bit, please select according as you need.

6. After that, the installation will proceed as shown in 2.11.

Figure 2.11 Installing

☞ Note:

During the installation, you will see the warning box as shown in figure 2.12, please select "Install this driver software anyway" to proceed.

Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

Figure 2.12 warning for security

7. Finally, the installation will complete, you will see the next screen below, click Close to complete.

Update Driver Software - KR.XC Wireless Adapter
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
KR.XC Wireless Adapter
Close

Figure 2.13 Complete the installation

2.2 Hardware Installation

1. Connect one end of the USB cable to the Adapter.
2. Connect the other end of the USB cable to the USB port on your computer. Because the Adapter gets its power from the host, there is no external power supply. The LED should light up when the Adapter is plugged in and the PC is on.

2.3 Uninstall Software

2.3.1 Uninstall the driver software from your PC

1. On the Windows taskbar, click the Start button, point to Settings, and then click Control Panel.
2. Double-click the System icon, click on the Hardware tab in the System window.
3. Click on the Device Manager button, double-click Network Adapters, and then right-click Kraun KR.XC USB Wireless Adapter.

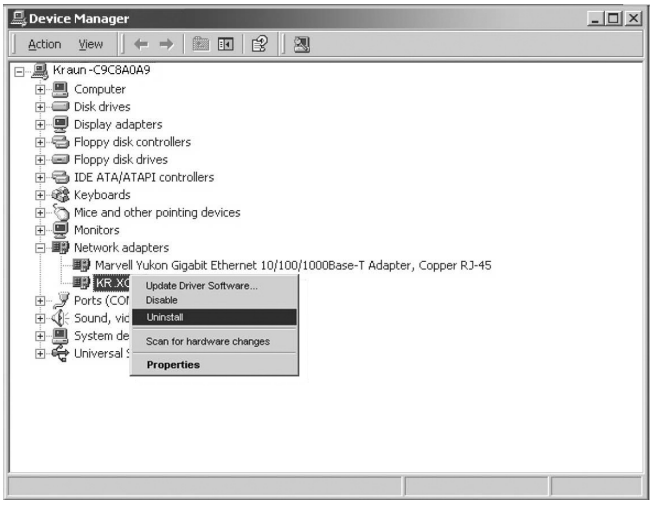

Figure 2.14 Uninstall Driver

4. Click Uninstall..., shown in above figure 2.14, the system will uninstall the driver software of the adapter from your PC.

2.3.2 Uninstall the utility software from your PC

1. On the Windows taskbar, click the Start button, point to Settings, and then click Control Panel
2. Double-click the Add/Remove Programs icon, find the Kraun KR.XC program from the installed program list, highlight it and click the Remove button.
3. Following the Install Shield Wizard will uninstall the utility software from your PC.

☞ Note:

KR.XC don't have utility for Windows Vista, so you should follow the section 2.3.1 to uninstall the driver software from your PC.

3. Configuration

Kraun KR.XC can be configured by its utility. This section describes how to configure your USB Wireless Adapter for wireless connectivity on your Wireless Local Area Network (WLAN) and use the data security encryption features.

After the Adapter's driver and utility has been installed, the adapter's tray icon, or , will appear in your system tray. It means the utility is running on your system. If the utility does not run, you can run the utility by clicking: Start> Program> Kraun> KR.XC > KR.XC Wireless Client Utility. If the icon still does not appear, the driver or utility may be installed incorrectly or the adapter is unplugged, please try again.

Icon means the connection has been established. Icon means there is no connection.

Double-click the icon and the configuration screen of the utility will appear. You can also run the utility by clicking: Start> Program> Kraun> KR.XC > KR.XC Wireless Client Utility. The utility provides a complete and easy to use set of tools to:

- Display current status information
- Edit and add configured profiles
- Display current diagnostics information

The section below introduces these above capabilities.
Note: If your OS is Windows XP, you can use Windows XP to configure the wireless network settings. (To use this function, you must upgrade the OS with sp1).
If you want to use Windows XP to configure wireless network settings, just exit the utility. Right-click the icon at the bottom of the screen, and click Exit to exit the utility.

Configuration for windows Vista

After the Adapter's driver has been installed, Windows Vista will display a wireless Network Connection message like this one.

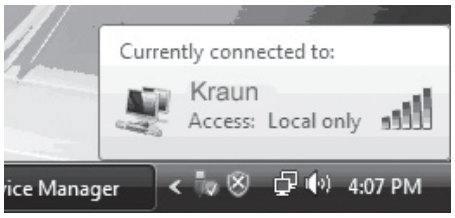

Figure 3.1

Icon means the connection has been established. Icon means there is no connection.
If the icon does not appear, please follow the steps below. If the icon still does not appear, the driver may be installed incorrectly or the adapter is unplugged, please try again.

1. Right-click the icon in your system tray, then click Connect to a network.

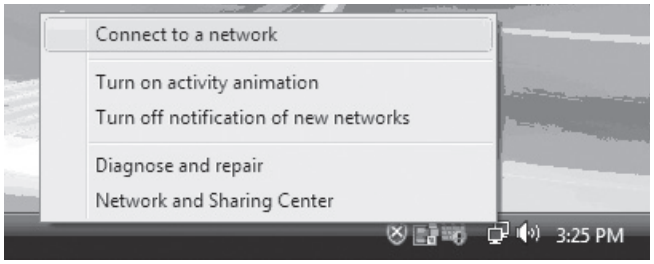

Figure 3.2

2. The screen that appears will show you many available wireless networks. Highlight the network that you want, and then click Connect.

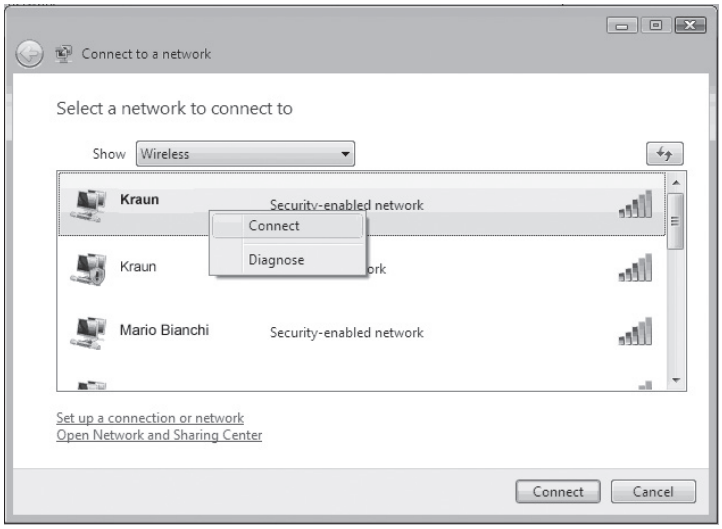

Figure 3.3

3. To continue, click Connect Anyway. Click the Cancel button to end the Installation.

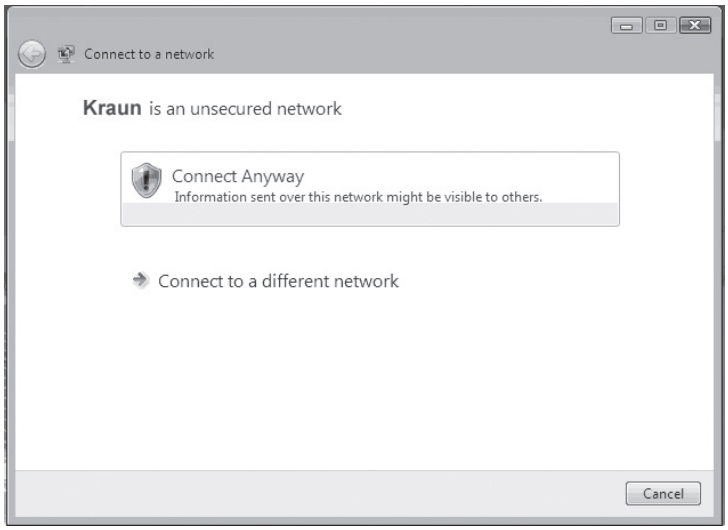
Connect to a network
Kraun is an unsecured network
Connect Anyway
Information sent over this network might be visible to others.
Connect to a different network
Cancel

Figure 3.4

4. After that, the installation will proceed as shown in Figure 3.5, click close.

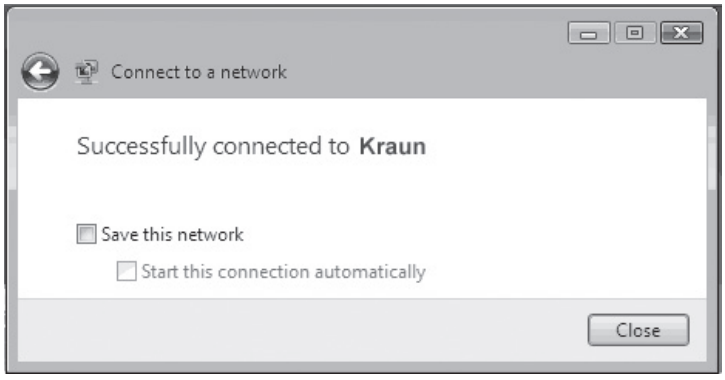

Figure 3.5

5. The screen below will appear if the connection is successfull.

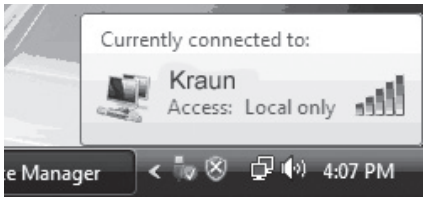

Figure 3.6

3.1 Profile

Click the Profile tab of the utility and the Profile screen will appear, figure 3.7. The Profile screen provides tools to:

- Add a profile
- Delete a profile
- Edit a profile
- Activate a profile

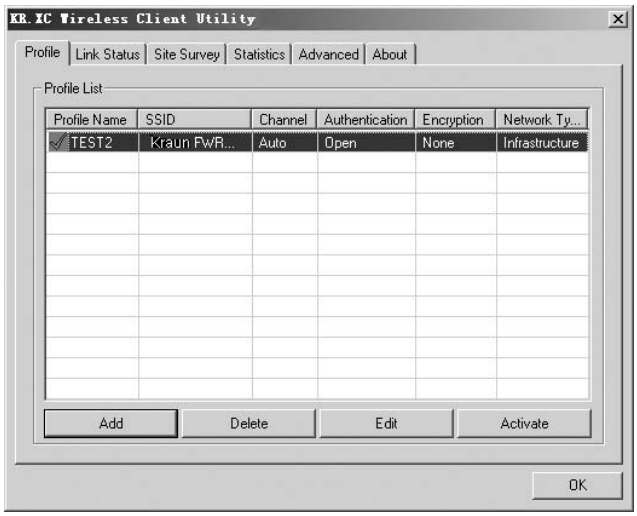

Figure 3.7 Profile Tab

To create a new profile, click the Add button on the Profile tab, the Profile configuration screen will appear as shown in figure 3.8.
To edit a profile, highlight the desired profile name on Profile Name list, and click the Edit button, the Profile configuration screen will appear shown in figure 3.7.
To delete a profile, highlight the desired profile name on Profile Name list, and click the Delete button.
To switch to another profile, highlight the desired profile name on Profile Name list, and click the Activate button.
Note: Do not forget to click the Apply button when you create a new profile for connection.

3.1.1 Add or Edit a Configuration Profile

To add a new configuration profile, click Add button on the Profile Management tab. To modify a configuration profile, select the configuration from the Profile list and click Edit.
The Profile Management dialog box will display a screen similar to that shown in Figure 3.8.

1. Edit the Configuration tab
   - Profile Name - Identifies the configuration profile. This name must be unique. Profile names are not case-sensitive.
   - SSID - The IEEE 802.11 wireless network name. This field has a maximum limit of 32 characters.
   - PSW(Power Save Mode)
     - CAM(Constantly Awake Mode) - Continuous Access Mode.
     - PSW(Power Saving Mode) - Power Saving mode.
   - Network Type - Displays the wireless mode, either Ad-hoc or Infrastructure mode
   - Preamble - Specifies the preamble setting in 802.11b. The default setting is Auto Switch (access point mode), which allows both short and long headers in the 802.11b frames. The adapter can only use short radio headers if the access point supports and uses them.

- RTS Threshold - Default is 2347 .
- Fragment Threshold - Default is 2346 .
- Ad-hoc mode - Displays the wireless mode, either Only 802.11B or 802.11B/G mode.
- Channel - Shows the current channel in use. This field determines which operating frequency will be used.

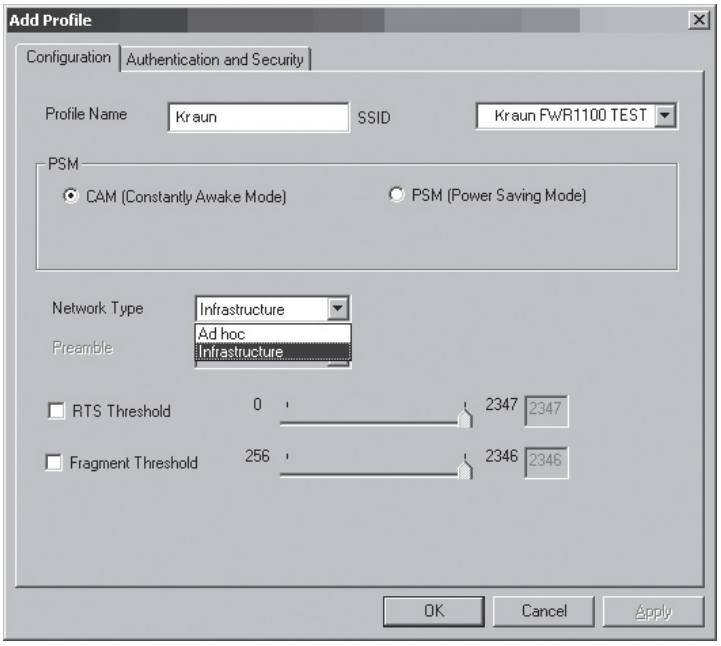

Figure 3.8 Add Profile - configuration

2. Edit the Authentication and Security tab

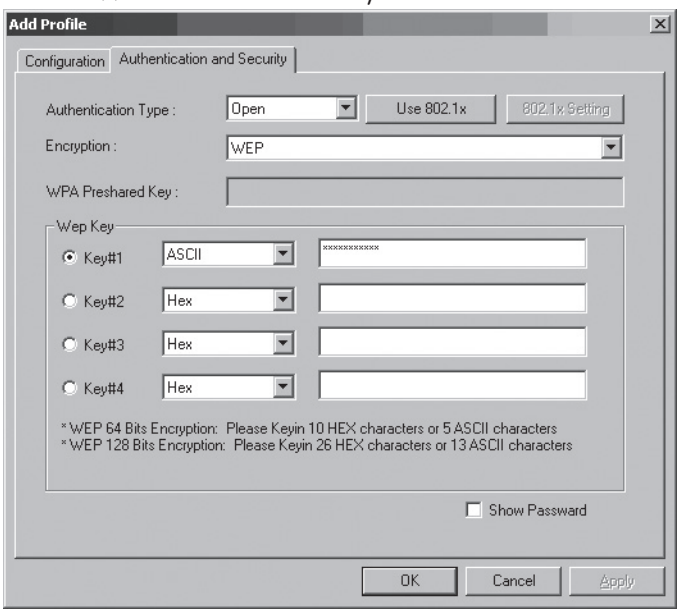

Figure 3.9 Add Profile – configuration

- Authentication Type - Three options, Open System, Shared-Key System or LEAP.
- 802.1x Setting - It enables when Authentication Type is setting to WPA.
- Encryption - Displays which encryption type that the driver is using. When you select Open System, Shared-Key System as Network Authentication, there are two options: WEP and Disabled. If you select WPA-PSK as Network Authentication, there are TKIP and AES options instead of WEP and Disabled.
- Wep Key - Key #1, Key #2, Key #3, Key #4, the Key groups. You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F) or 5 ASCII characters for 64-bit (also called 40bits) encryption. You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F) or 13 ASCII characters for 128-bit (also called 104bits) encryption.

3.2 Link Status

The Link Status tab displays the adapter's current status.

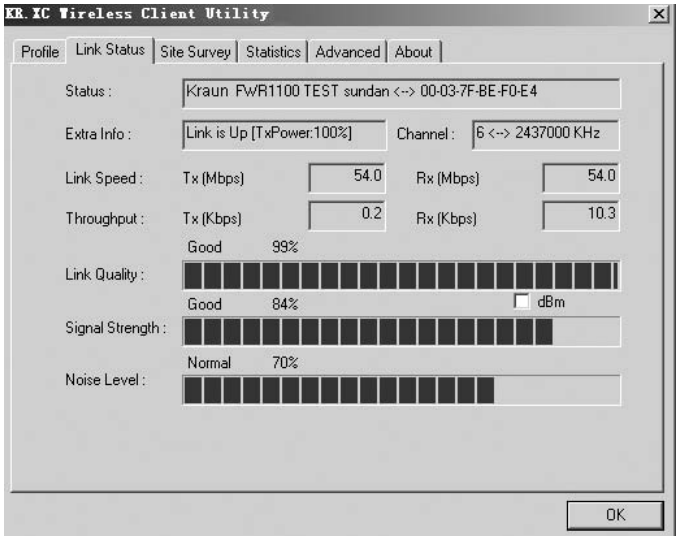

Figure 3.10 Link Status

The following table describes the items found on the Network Status screen.

- Status - Shows whether the station is connected to the wireless network, if not connected, display RF is closed; if connected, display AP name and BSSID.
- Extra Info - Shows link status and the current channel in use.
- Link Speed - Shows the current max Transfer rate, unit is Mbit/sec.
- Throughput - Displays Tx and Rx rate, unit is Kbits/sec.
- Link Quality - Shows the quality of the signal.
- Signal Strength - Shows the strength of the signal.

3.3 Site Survey

Click the Site Survey tab of the Utility and the Site Survey screen will appear, figure 3.11. On the Site Survey screen you can scan the Available Infrastructure and Ad Hoc Networks.

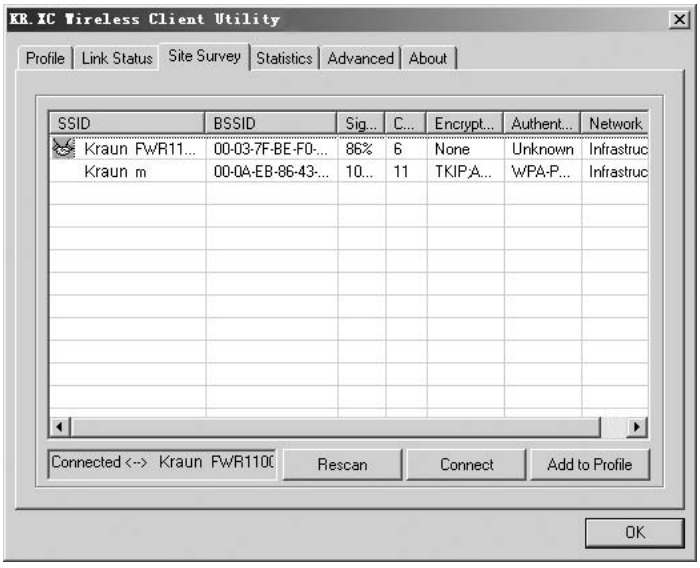

Figure 3.11 Site Survey tab

Click the Rescan button to refresh the list at any time. Highlight an SSID and click the Connect button to connect to an available network.

3.4 Statistics

The Statistics tab shows receiving and transmitting statistical information for the following receive and transmit diagnostics for frames received by or transmitted to the wireless network adapter. Click the Reset Counter button to reset the count of the statistics information.

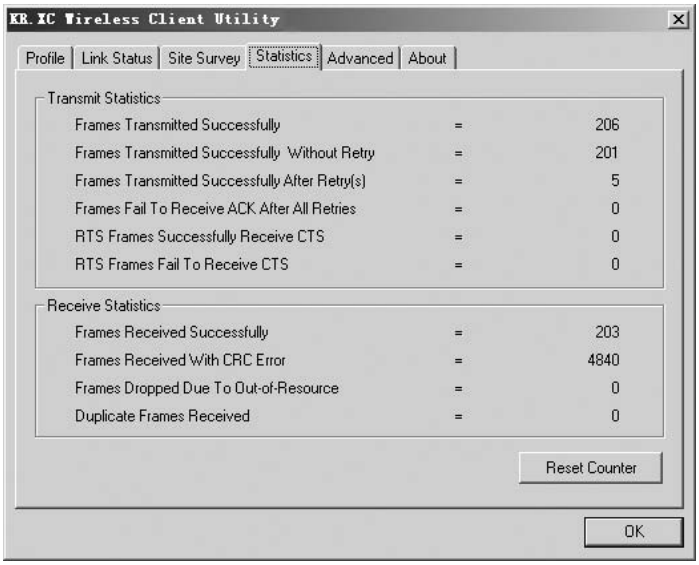
KR.XC Wireless Client Utility
Profile
Link Status
Site Survey
Statistics
Advanced
About
Transmit Statistics
Frames Transmitted Successfully = 206
Frames Transmitted Successfully Without Retry = 201
Frames Transmitted Successfully After Retry(s) = 5
Frames Fail To Receive ACK After All Retries = 0
RTS Frames Successfully Receive CTS = 0
RTS Frames Fail To Receive CTS = 0
Receive Statistics
Frames Received Successfully = 203
Frames Received With CRC Error = 4840
Frames Dropped Due To Out-of-Resource = 0
Duplicate Frames Received = 0
Reset Counter
OK

Figure 3.12 Statistics tab

3.5 Advanced

On this Screen, you can configure the WEP key or view the configured WEP key.

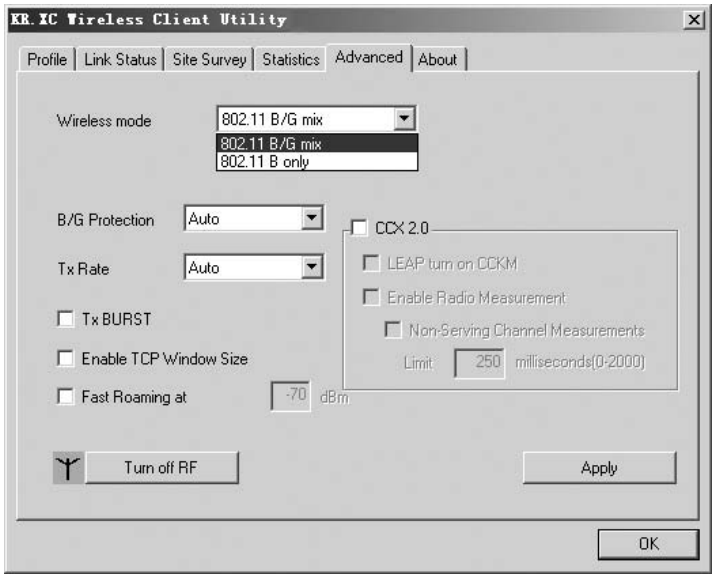

Figure 3.13 Advanced

- Wireless mode - Displays the wireless mode, either 802.11B/G mix or 802.11B only.
- B/S Protection - There are three options: either Auto or Enable, or Close.
- TxRate - Shows the current Transfer rate.
- TxBURST - It can translate more data when it enable.
- Fast Roaming at - Roaming will disable when Transmit Power is below some dBm.
- Turn off RF - The wireless radio of this adapter can be enabled or disabled. You can turn the wireless radio off by selecting the checkbox.
- Apply - Click the Apply button to save the current setting.

3.6 About

This screen displays some information about this adapter, including Driver Date, Driver Version, Utility Date, Utility Version, MAC Address, IP Address, SubMask, Power Save mode and Preamble.

- Utility Version - The version of this utility.
- Utility Date - The creation date of this utility.
- Driver Version - The version of the wireless network adapter driver.
- Driver Date - The creation date of the wireless network adapter driver.
- EEPROM Version - The version of this EEPROM.
- IP Address - The IP address of the wireless network.
- Phy_Address - The MAC address of the wireless network adapter.
- SubMask - The subnet mask of the wireless network.
- Default Gateway - The default gateway of the wireless network.

Figure 3.14 About

3.7 An example for application

Suppose you have an installed and using AP, the SSID is Kraun and it adopts 64-bit encryption with the key 0123456789. To establish a connection with this AP, you should follow these steps below:

1. Launch Kraun KR.XC Wireless Utility.
2. Click the Profile tab of the utility and click the New button on the screen that appears.
3. The Profile configuration screen will appear, please enter Test for the Profile Name, Kraun for the SSID, select Infrastructure for the Network Mode, select WEP for the Data Encryption and enter 0123456789 for Network key.
4. Click OK to save this profile.
5. Click Apply on the Profile screen. The utility will establish a connection with this AP by configured profile.

Appendix A: Specifications

Normal

Interface	A-type USB 2.0 Connector
Standards	IEEE802.11b; IEEE802.11g
Operating System	Windows 98Se, Me, 2000, XP, Vista
Transmission Distance	In door up to 100m, out door up to 300m (it is limited to the environment).
Radio Data Rate	54/48/36/24/18/12/9/6Mbps or 11/5.5/3/2/1Mbps (Auto Rate Sensing)
Modulation	1M DBPSK; 2M DQPSK; 5.5M, 11M CCK; 6M, 9M, 12M, 18M, 24M, 36M, 48M, 54M OFDM;
Media Access Protocol	CSMA/CA with ACK
Transmit Power	22dBm (Typical)
Data Security	WPA; 64/128 BIT WEP; TKIP/AES; IEEE802.1x authentication
Frequency	2.4 ~ 2.4835GHz
Spread Spectrum	Direct Sequence Spread Spectrum (DSSS)
Power Consumption	Typically 480mA in full Transmit (TX), 420mA in full Receive (RX)
Safety & Emissions	FCC, CE

Physical Environmental

Operating Temp	0°C~40°C (32°F~104°F)
Storage Temp	-40°C – 70°C (-40°F~158°F)
Humidity	10% - 95% RH, Non-condensing
Dimensions (W×D×H)	3.4×1.0×0.5 in. (86×26×12 mm)

Appendix B: Glossary

- 802.11b - The 802.11b standard specifies a wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- 802.11g - specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- Ad-hoc Network - An ad-hoc network is a group of computers, each with a wireless adapter, connected as an independent 802.11 wireless LAN. Ad-hoc wireless computers operate on a peer-to-peer basis, communicating directly with each other without the use of an access point. Ad-hoc mode is also referred to as an Independent Basic Service Set (IBSS) or as peer-to-peer mode, and is useful at a departmental scale or SOHO operation.
- DSSS (Direct-Sequence Spread Spectrum) - DSSS generates a redundant bit pattern for all data transmitted. This bit pattern is called a chip (or chipping code). Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the receiver can recover the original data without the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers. However, to an intended receiver (i.e. another wireless LAN endpoint), the DSSS signal is recognized as the only valid signal, and interference is inherently rejected (ignored).
- FHSS (Frequency Hopping Spread Spectrum) - FHSS continuously changes (hops) the carrier frequency of a conventional carrier several times per second according to a pseudo-random set of channels. Because a fixed frequency is not used, and only the transmitter and receiver know the hop patterns, interception of FHSS is extremely difficult.
- Infrastructure Network - An infrastructure network is a group of computers or other devices, each with a wireless adapter, connected as an 802.11 wireless LAN. In infrastructure mode, the wireless devices communicate with each other and to a wired network by first going through an access point. An infrastructure wireless network connected to a wired network is referred to as a Basic Service Set (BSS). A set of two or more BSS in a single network is referred to as an Extended Service Set (ESS). Infrastructure mode is useful at a corporation scale, or when it is necessary to connect the wired and wireless networks.
- Spread Spectrum - Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communications systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread-spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).
- SSID - A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.
- WEP (Wired Equivalent Privacy) - A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard.
- Wi-Fi - A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.
- WLAN (Wireless Local Area Network) - A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.
- WPA (Wi-Fi Protected Access) - A wireless security protocol use TKIP (Temporal Key Integrity Protocol) encryption, which can be used in conjunction with a RADIUS server.

SAFETY NOTICES

Caution: Do not use this product near water, for example, in a wet basement or near a swimming pool.